



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/765,093 | 01/28/2004 | Steven M. Bessette | WFG-4380-150 | 9833 |
| 23117 7590 02/12/2009 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203 | | | | |
| EXAMINER | | | | |
| QAZI, SABIHA NAIM | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 1612 | | | | |
| MAIL DATE | | DELIVERY MODE | | |
| 02/12/2009 | | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/765,093

Applicant(s)

BESSETTE, STEVEN M.

Examiner

Sabiha Qazi

Art Unit

1612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 6-14 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,3 and 6-14 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

Final Office Action

Claims 1, 3, 6-14 are pending. No claim is allowed at this time. Amendments are entered.

Summary of this Office Action dated Thursday, January 15, 2009

1. Double Patenting Rejection
2. 35 USC § 103(a) Rejection
3. 35 USC § 112 (2) Rejection
4. Specification
5. Response to Remarks
6. Communication

Double Patenting Rejection

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 3, 6-14 stand rejected under the judicially created doctrine of double patenting over claims 1-9 and specification of BESSETTE (US Patent No. 6,506,707) since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: The instant claims are drawn to a method for controlling/killing weeds and grasses by applying a composition comprising thymol and eugenol (clove oil).

US "707 teaches a herbicidal compositions containing plant essential oils and mixtures or blends thereof and herbicidal compositions containing certain plant essential oils. to herbicidal compositions **containing synergistic blends of certain plant essential oils**. The reference also teaches a method for controlling weeds and grasses by the application of pesticidally effective amounts of the herbicidal compositions containing certain plant essential oils and/or synergistic blends thereof to a locus where weed and grass control is desired.

The reference also teaches that the herbicidal composition comprising, in admixture with a suitable carrier and optionally with a suitable surface active

agent, a plant essential oil compound and derivatives thereof, including racemic mixtures, enantiomers, diastereomers, hydrates, salts, solvates and metabolites, etc.

Each plant essential oil or derivative thereof, comprises a monocyclic, carbocyclic ring structure having six-members and substituted by at least one oxygenated or hydroxyl functional moiety. Examples of plant essential oils encompassed include, but are not limited to, members selected from the group consisting of aldehyde C16 (pure), amyl cinnamic aldehyde, amyl salicylate, anisic aldehyde, benzyl alcohol, benzyl acetate, cinnamaldehyde, cinnamic alcohol, .alpha.-terpineol, carvacrol, carveol, citral, citronellal, citronellol, p-cymene, diethyl phthalate, dimethyl salicylate, dipropylene glycol, eucalyptol (cineole), **eugenol**, **iso-eugenol**, galaxolide, geraniol, guaiacol, ionone, d-limonene, menthol, methyl anthranilate, methyl ionone, **methyl salicylate**, .alpha.-phellandrene, pennyroyal oil, perillaldehyde, 1- or 2-phenyl ethyl alcohol, 1- or 2-phenyl ethyl propionate, piperonal, piperonyl acetate, piperonyl alcohol, D-pulegone, terpinen-4-ol, terpinyl acetate, 4-tert butylcyclohexyl acetate, **thyme oil**, **thymol**, metabolites of trans-anethole, vanillin, ethyl vanillin, and the like. As these plant essential oil compounds are known and used for other uses, they may be prepared by a skilled artisan by **employing known methods**.

The reference teaches that a preferred embodiment relates to (1) a herbicidal composition for agricultural and household use comprising a mixture of **eugenol, alpha-terpineol, citronellal, thymol and trans-anethole** (2) to herbicidal compositions for household use for i) broadleaf weed control or ii) total weed and grass control, comprising a mixture of eugenol and 2-phenethyl propionate at various dosage rates and (3) to a herbicidal composition for agricultural and household use comprising a mixture of eugenol and 2-phenethyl propionate synergized by the addition of thymol.

The herbicidal compositions of the prior art **unexpectedly exhibit excellent herbicidal activities without corresponding issues of toxicity to mankind and the environment** and provide unexpectedly fast action against green plant matter without systemic action against plant roots. The reference further teaches that **plant essential oils disrupt cell membranes in plant tissue, releasing proteins within the plant matter. Alternatively, plant essential oils inhibit amino acid synthesis, and preclude production of certain enzymes which allows the plant cell to produce essential amino acids. Alternatively, plant essential oils may act as photosynthesis inhibitors or pigment inhibitors. Photosynthesis inhibitors prevent the plant's conversion of sunlight into chemical energy required for growth.** Pigment inhibitors prevent production of certain plant

pigments that are necessary for photosynthesis. In any event, the net effect of the toxicity and action of the inventive composition disclosed herein is heretofore unknown and unexpected.

The reference further teaches that the composition results in fast, effective weed and grass control, particularly against broadleaf plants. As such, they are advantageously employed as herbicidal agents in uses such as, without limitation, agriculture, defoliants, organic farming, households, lawn and garden, professional pest control, foliage application, solid treatment, soil incorporation application, seedling box treatment, stalk injection and planting treatment, turf and ornamentals, etc.

The reference teaches that the compositions are so chemically inert that they are compatible with substantially any other constituents of the spray schedule. They may also be used in combination with other pesticidally active compounds, including other herbicides.

The reference further teaches that the herbicidal compositions of the may be employed alone or in the form of mixtures with such solid and/or liquid dispersible carrier vehicles and/or other known compatible active agents, especially plant protection agents, such as other pesticides, or insecticides, miticides, acaricides,

nematicides, fungicides, bactericides, rodenticides, fertilizers, growth-regulating agents, etc., if desired, or in the form of particular dosage preparations for specific application made therefrom, such as solutions, emulsions, suspensions, powders, pastes, and granules which are thus ready for use. The herbicidal compositions can be formulated or mixed with, if desired, conventional inert pesticide diluents or extenders of the type usable in conventional pesticide formulations or compositions, e.g. conventional pesticide dispersible carrier vehicles such as gases, solutions, emulsions, suspensions, emulsifiable concentrates, spray powders, pastes, soluble powders, dusting agents, granules, foams, pastes, tablets, aerosols, natural and synthetic materials impregnated with active compounds, microcapsules, coating compositions for use on seeds, and formulations used with burning equipment, such as fumigating cartridges, fumigating cans and fumigating coils, as well as ULV cold mist and warm mist formulations, etc. See the entire document especially lines 12-14, col. 1; lines 19-65, col. 2; lines 32-65, col. 3; examples and claims.

Instant claims differ from the reference because the reference teaches a herbicidal composition containing synergistic **mixtures or blends of certain plant essential oils** and the herbicidal composition for agricultural and household use comprising a mixture of **eugenol (an active component of clove oil)** and 2-

phenethyl propionate **synergized by the addition of thymol**. Prior art does not teach clove oil.

It would have been obvious to one skilled in the art to prepare additional herbicidal compositions containing thymol and eugenol which has been taught by the prior art. Prior art does not teach clove oil however eugenol is an active component of clove oil. One would be motivated to use thymol because prior art teach that addition of thymol synergized the composition containing eugenol. Present invention would have been obvious by the teachings of the specification and claims of US '707.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application, which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 11 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 is improperly dependent on claim 4 which has been cancelled.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Applicants claim

CURRENTLY AMENDED) A herbicidal composition comprising an herbicidally acceptable carrier, humic acid and an herbicidally active ingredient, wherein the herbicidally active ingredient consists of clove oil and thymol (claim 1).

Claims 1, 3, 6-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over YU et al.¹ (US Patent 5,811,079), TWORKOSKI (Journal reference: "Herbicide Effects of Essential Oils," *Weed Science*, 50(4): 425-431, 2002), and (T.L .SENN and SENN and KINGMAN) ,A Review of Humus and Humic ,IDS reference filed on 3/11/2004) FAUST, ROBERT H.² These reference teach a composition and method which embraces Applicant's claimed invention. See the entire documents.

¹ YU et al. (US Patent 5,811,079)

YU teaches a composition containing aromatic oils including methyl salicylate, eugenol, iso-eugenol, clove oil, thymol, see lines 12-56 in column 4, lines 4-14 in column 5.

SENN teaches that humic acids and their derivatives increase the permeability of plant membranes, so promoting the uptake of nutrients. They attributed this effect to the presence of iron in the humic acids or to their colloidal nature. It also teaches that humic substances as organic catalysts. Sunflower leaves, the presence of humic acids was found to increase the percentage content and total amount of nitrogen in sunflower leaves. Humic acids in small amounts act as specific sensitizing agents, increasing the permeability of the plasma and resulting in an increased uptake of nutrients by the plants. SENN also teaches specific humic acid “leonardite” which has been used by Applicants. See Page 5 in SENN and KINGMAN

FAUST teaches the effects of fulvic acid in **curing both plant and human diseases. It also showed reducing in leaf feeding pests including slugs. Fulvic acid increases the absorption.** See the entire document, especially table on page

2. The use of humic acids or fractions of humic acids for seed soaking or treating have been extensively studied and used in ancient times for medicines and agricultural purposes. The use of fulvic acids for seed treatment and as a foliar spray has potential low-cost benefits for organic, low income and biological farmers. Fulvic acids used as a foliar spray have been shown to reduce moisture use by crops by as much as 25%.

TWORKOSKI teaches that clove oil, when applied to a plant, causes severe electrolyte damage and cell death. Furthermore it teaches the composition containing rhyne and clove (Table 1 on page 426) and figure 1 on page 427, figure 2 and 3 on page 428 where various concentrations of essential oils are disclosed including **clove and red thyme** and figure 4 and figure 5 on pages 429-430. The reference further teaches that weed shoot control was achieved with cinnamon and clove. Eugenol is a volatile phenol, and this class of compounds essential oils at concentrations of 5 to 10%. Eugenol may be a valuable source of natural herbicides.

It would have been obvious to one skilled in the art at the time of the invention was filed to prepare a composition comprising and clove oil, thymol,

² FAUST (<http://www.bioag.com/fulvi-seedtreat.html>)

methyl salicylate, eugenol and humic acid or humic acid because YU teaches compositions containing aromatic oils and WORKOSKI teaches the use of clove oil as an herbicide and SENN teaches that addition of humic acid increases penetration. Therefore, the instant invention is considered *prima facie* obvious over the prior art. Methyl **salicylate is a flavoring agent (found in oil of Wintergreen)**. By the combined teaching or prior art cited above the presently claimed subject would have been obvious to one skilled in the art. Data presented in specification contain compositions containing clove oil and HS. The results are expected because addition of HS increases the penetration so more absorption of herbicides and so more control is expected.

No fulvic acid was found in the description or examples except in original claims 6. No thymol or methyl salicylate is any example.

In the light of the forgoing discussion, the Examiner's ultimate legal conclusion is that the subject matter defined by the instant claims would have been obvious within the meaning of 35 U.S.C. 103(a).

Specification

Amended claims are considered. Examiner notes, that no example in the disclosure contains **clove oil and thyme or thyme oil** as cited in claims. Addition

of humic acid in present invention clearly discloses that it is not used as herbicides. Present invention is directed to herbicidal compositions containing clove oil and to herbicidal compositions containing synergistic mixtures of clove oil and other plant essential oils and/or conventionally used herbicides or **soil amendments/adjuvants that act by facilitating the uptake of the herbicidal compositions of the present invention into a target** weed or grass, such as, but not limited to, humus and humic acid containing materials, e.g., leonardite, etc.. In addition, the present invention is directed to a method for controlling weeds and grasses by applying a herbicidally-effective amount of the above herbicidal compositions to a locus where weed and grass control is desired [0019]

The test composition contained clove oil (about 45.6% v/v) as the active ingredient and water/lecithin (about 54.4% v/v) as the carrier (per 2.5 gallons of test composition) and is listed as "Clove Oil" in the tables. For certain test runs, a leonardite- based adjuvant/soil amendment liquid containing humic acid (about 84-86%) and fulvic acid (about 53-55%)) with and without paraffinic oil (a.k.a. white mineral oil), was mixed with the test composition at various ratios as indicated in Tables 1 and 2 and applied to the target weeds and grasses. In the tables, the adjuvant is listed as "HS" while the white mineral oil is listed as "SO" 0057]

Response to Remarks

Applicants argue that "according to Yu the "active ingredients" must comprise more ingredients than the recited in the present claims." Examiner respectfully disagrees because Applicants claims recite the term "comprising", the transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., *>Invitrogen Corp. v. Biocrest Mfg., L.P.*, 327 F.3d 1364, 1368, 66 USPQ2d 1631, 1634 (Fed. Cir. 2003) ("The transition 'comprising' in a method claim indicates that the claim is open-ended and allows for additional steps."); *Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997) ("Comprising" is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.); *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 803 (CCPA 1981); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 1948) ("comprising" leaves "the claim open for the inclusion of unspecified ingredients even in major amounts").

Examiner disagrees that FAUST does teach humic acid useful as herbicides **because Applicants are not using as herbicides the specification discloses “soil amendments/adjuvants that act by facilitating the uptake of the herbicidal compositions of the present invention into a target weed or grass, such as, but not limited to, humus and humic acid containing materials, e.g., leonardite, etc.”** [0019]. Furthermore SENN reference teaches that addition of humic acid increases the penetration.

“One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.” In re Keller, 642 F.2d 413, 208 SPQ 871 (CCPA 1981); In re Merck & Co., Inc., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). See MPEP 2145.

- Double Patenting Rejection is maintained would be withdrawn when Applicants will file a terminal disclaimer.
- Claims are amended therefore a new reference has been added. No example in the disclosure contains only clove oil and thymol or methyl salicylate.

Conclusion

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**.

See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sabiha Qazi whose telephone number is (571) 272-0622. The examiner can normally be reached on any business day except Wednesday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Krass Frederick can be reached on (571) 272-0580. The

fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sabiha Qazi/

Primary Examiner, Art Unit 1612

